



Il Prof. Dr. Can Koral ha conseguito la Laurea in Fisica e la Laurea Magistrale in Micro e Nanotecnologie presso la Middle East Technical University rispettivamente nel 2005 e nel 2012. Tra il 2006 e il 2012, ha lavorato come Ricercatore in vari progetti di Ricerca e Sviluppo, inizialmente presso Nanomagnetics, seguito dal Centro Nazionale di Ricerca in Nanotecnologia e successivamente dal Centro di Ricerca in Nanotecnologia, entrambi affiliati alla Bilkent University. Ha conseguito il Dottorato di Ricerca in Scienze Chimiche presso l'Università degli Studi di Bari "Aldo Moro", Italia, nel 2016. Nel 2015, è stato ricercatore ospite presso il Laser Materials Interactions Group del Lawrence Berkeley National Laboratory, California, USA. Ha ricoperto posizioni di ricercatore post-dottorato presso il Dipartimento di Chimica dell'Università degli Studi di Bari, Italia, nel 2016, il Dipartimento di Fisica dell'Università degli Studi di Napoli "Federico II", Italia, nel 2017, l'Istituto Nazionale di Fisica Nucleare, Italia, dal 2018 al 2021, e di nuovo presso l'Università degli Studi di Napoli fino al 2022. Il Prof. Dr. Koral è un membro attivo del Comitato Editoriale del gruppo editoriale accademico MDPI per le riviste di "Crystals, Foundations, Symmetry, Biosensors, Materials, Sensors, Chemosensors, Photonics, Electronics, Coatings, Micromachines, Applied Sciences" e svolge attività di revisore per numerose riviste scientifiche internazionali. Gli è stato conferito il Premio "Panagiotis Kanellopoulos" 2022 per le sue collaborazioni di ricerca con l'Università di Patras. Ha ottenuto l'Abilitazione Scientifica Nazionale per le funzioni di Professore Associato nei settori "Fisica Sperimentale Della Materia" e "Fisica Applicata, Fisica per le scienze della vita, l'ambiente e i beni culturali" rispettivamente nel 2022 e 2023, con l'approvazione del Ministero dell'Università e della Ricerca italiano. Attualmente sta proseguendo la sua carriera accademica come Assistant Professor of Physics (RTD-B), Fisica Applicata presso il Dipartimento di Scienze della Salute dell'Università degli Studi della Basilicata, Potenza, Italia. La sua attività scientifica combina fisica applicata, chimica analitica, ottica/fotonica e scienza dei materiali, con particolare attenzione a varie tecniche di spettroscopia e imaging con applicazioni in diversi campi. Possiede esperienza in spettroscopia a terahertz nel dominio del tempo, ellissometria a terahertz, tecniche di spettroscopia a plasma indotta da laser e metodi di analisi. Le sue attività di ricerca si concentrano sulle interazioni laser-materia, sulle analisi qualitative e quantitative dei materiali, sullo sviluppo di progetti opto-meccanici e sull'ingegnerizzazione e caratterizzazione di sensori basati su metamateriali e nanomateriali per varie applicazioni.

ISTRUZIONE

PhD in Scienze Chimiche, Università degli studi di Bari Aldo Moro, Bari, Italia (2013-2016).

M.Sc. in Micro and Nano Technology Department, Middle East Technical University (METU-ODTU), Ankara, Turchia (2009-2012)

B.Sc. in Physics, Middle East Technical University (METU-ODTU), Ankara, Turchia (2001-2005).

BORSE E PREMI

Premio: "Panagiotis Kanellopoulos" (2023) Assegnato da : University of Patras

Il Premio per La Migliore Pubblicazione "Panagiotis Kanellopoulos" 2022 assegnato, in occasione della celebrazione della Festa Dei Tre Gerarchi e Delle Lettere. Il premio "Panagiotis Kanellopoulos - per la pubblicazione eccezionale", istituito nel 2021, mira a sottolineare l'importanza della ricerca di base e applicata riconoscendo e premiando qualsiasi lavoro di ricerca eccezionale svolto in collaborazione con l'Università di Patrasso.

Horizon 2020, Mobilitas Plus, Postdoctoral Research Grant, Tallinn University of Technology, Tallin, Estonia.

“Designing Portable Smart Analytical Devices based on a hybrid microfluidic platform combining spectroscopic and electrochemical sensor technologies for analytes detection” (2017)

Visiting Research Scholar Award, Lawrence Berkeley National Laboratory, Laser Technologies Group, Berkeley CA, USA (2015)

Region Puglia, Foreign PhD Research Scholarship, Università degli studi di Bari Aldo Moro (2013-2016)

M.Sc. Research Scholarship, Middle East Technical University (2009-2012)

PARTECIPAZIONE A SCUOLE INTERNAZIONALI E FORMAZIONE

Internazional School on “Electrical Discharges With Liquids For Future Applications”, Cost Action Td1208, Jozef Stefan Institute, Lubljiana, Slovenia, 2-6 Febbraio 2014

XXXV International Doctoral School on Metamaterials, EUPROMETA, Rome Tre University, Department of Engineering, Rome, Italy, 18-22 Dicembre 2017

Corso di formazione in “Laser Safety, Course ID: EHS0302”, Lawrence Berkeley National Laboratory, CA, USA, 2015

Corso di formazione in “Cryogen Safety, Course ID: EHS0170”, Lawrence Berkeley National Laboratory, CA, USA, 2015

Corso di formazione in “Clean Room Procedures”, Bilkent University, Nanotechnology Research Center NANOTAM, Ankara, Turkey, 2012

PUBBLICAZIONI (selezionate):

A Hybrid Design for Frequency-Independent Extreme Birefringence Combining Metamaterials with the Form Birefringence Concept

Photonics 2024-09 | journal-article / DOI: [10.3390/photonics11090860](https://doi.org/10.3390/photonics11090860)

Highly Tunable MOCVD Process of Vanadium Dioxide Thin Films: Relationship between Structural/Morphological Features and Electrodynamical Properties

Sensors 2023-08 | journal-article / DOI: [10.3390/s23167270](https://doi.org/10.3390/s23167270)

A Large Area Wide Bandwidth THz Phase Shifter Plate for High Intensity Field Applications

Photonics 2023-07 | journal-article / DOI: [10.3390/photonics10070825](https://doi.org/10.3390/photonics10070825)

Liquid Crystal-Based Geometric Phase-Enhanced Platform for Polarization and Wavefront Analysis Techniques with the Short-TeraHertz FEL Oscillator TerRa@BriXSinO

Symmetry 2022-12 | journal-article / DOI: [10.3390/sym15010103](https://doi.org/10.3390/sym15010103)

THz Multi-Mode Q-Plate with a Fixed Rate of Change of the Optical Axis Using Form Birefringence

Micromachines 2022-05-20 | journal-article / DOI: [10.3390/mi13050796](https://doi.org/10.3390/mi13050796)

3-D printed THz q-plate with a fixed rate of change of the optical axis

International Conference on Infrared, Millimeter, and Terahertz Waves, IRMMW-THz 2022 | conference-paper / DOI: [10.1109/IRMMW-THz50927.2022.9895692](https://doi.org/10.1109/IRMMW-THz50927.2022.9895692)

Accurate THz ellipsometry using calibration in time domain

Scientific Reports 2022 | journal-article / DOI: [10.1038/s41598-022-10804-w](https://doi.org/10.1038/s41598-022-10804-w)

High brilliance Free-Electron Laser Oscillator operating at multi-MegaHertz repetition rate in the short-TeraHertz emission range

Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 2022 | journal-article / DOI: [10.1016/j.nima.2022.167289](https://doi.org/10.1016/j.nima.2022.167289)

Multi-Pass Free Electron Laser Assisted Spectral and Imaging Applications in the Terahertz/Far-IR Range Using the Future Superconducting Electron Source BriXSinO

Frontiers in Physics 2022 | journal-article / DOI: [10.3389/fphy.2022.725901](https://doi.org/10.3389/fphy.2022.725901)

Terahertz time-domain ellipsometry: tutorial

Journal of the Optical Society of America A: Optics and Image Science, and Vision 2022 | journal-article / DOI: [10.1364/JOSAA.463969](https://doi.org/10.1364/JOSAA.463969)

Dispersion diagram of surface plasmon polaritons from angular transmission investigation

Optics Letters 2021-06-01 | journal-article / DOI: [10.1364/ol.423048](https://doi.org/10.1364/ol.423048)

Effective EMI shielding behaviour of thin graphene/PMMA nanolaminates in the THz range

Nature Communications 2021 | journal-article / DOI: [10.1038/s41467-021-24970-4](https://doi.org/10.1038/s41467-021-24970-4)

Thermoplastic polyurethane-graphene nanoplatelets microcellular foams for electromagnetic interference shielding arXiv 2021 | other / Part of ISSN: [23318422](#)

THz Spectroscopy of Advanced Materials

Terahertz (THz), Mid Infrared (MIR) and Near Infrared (NIR) Technologies for Protection of Critical Infrastructures Against Explosives and CBRN 2021 | book-chapter / DOI: [10.1007/978-94-024-2082-1_18](#)

Tuning silicon nitride refractive index through radio-frequency sputtering power

Thin Solid Films 2021 | journal-article / DOI: [10.1016/j.tsf.2021.138951](#)

Defects in the Amorphous–Crystalline Evolution of Gel-Derived TiO₂

The Journal of Physical Chemistry C 2020-10-29 | journal-article / DOI: [10.1021/acs.jpcc.0c07568](#)

All-carbon THz components based on laser-treated diamond

Carbon 2020 | journal-article / DOI: [10.1016/j.carbon.2020.03.023](#)

Engineering of high quality factor THz metasurfaces by femtosecond laser ablation

Optics and Laser Technology 2020 | journal-article / DOI: [10.1016/j.optlastec.2020.106159](#)

Photocatalytic hydrogen evolution by co-catalyst-free TiO₂/C bulk heterostructures synthesized under mild conditions

RSC Advances 2020 | journal-article / DOI: [10.1039/d0ra01322f](#)

Sub-THz waveguide spectroscopy of coating materials for particle accelerators

Condensed Matter 2020 | journal-article / DOI: [10.3390/condmat5010009](#)

Sensing biological fluids using Resonating Surface Plasmon Polaritons in the THz range 2019 Thirteenth International Congress on Artificial Materials for Novel Wave Phenomena (Metamaterials) 2019-09 | journal-article / DOI: [10.1109/metamaterials.2019.8900883](#)

THz EMI Shielding in Graphene/PMMA Multilayers

2019 44th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz) 2019-09 | conference-paper / DOI: [10.1109/irmmw-thz.2019.8874200](#)

Encoded-enhancement of THz metasurface figure of merit for label-free sensing

Sensors (Switzerland) 2019 | journal-article / DOI: [10.3390/s19112544](#)

Geometrical Dependence on the Onset of Surface Plasmon Polaritons in THz Grid Metasurfaces

Scientific Reports 2019 | journal-article / DOI: [10.1038/s41598-018-36648-x](#)

Nanoparticle-Enhanced Laser Induced Breakdown Spectroscopy for the noninvasive analysis of transparent samples and gemstones

Talanta 2018-05 | journal-article / DOI: [10.1016/j.talanta.2018.02.001](#)

Diffuse THz Scattering via Coding Metasurfaces

2018 12th International Congress on Artificial Materials for Novel Wave Phenomena, METAMATERIALS 2018 / 2018 | conference-paper / DOI: [10.1109/MetaMaterials.2018.8534087](https://doi.org/10.1109/MetaMaterials.2018.8534087)

Novel measurement technique for the electromagnetic characterization of coating materials in the sub-THz frequency range

Physical Review Accelerators and Beams 2018 | journal-article / DOI: [10.1103/PhysRevAccelBeams.21.103101](https://doi.org/10.1103/PhysRevAccelBeams.21.103101)

Reduction of the beam-coupling impedance in accelerating structures using metamaterial-based absorbers

2018 12th International Congress on Artificial Materials for Novel Wave Phenomena, METAMATERIALS | conference-paper / DOI: [10.1109/MetaMaterials.2018.8534145](https://doi.org/10.1109/MetaMaterials.2018.8534145)

Suboptimal Coding Metasurfaces for Terahertz Diffuse Scattering

Scientific Reports 2018 | journal-article / DOI: [10.1038/s41598-018-30375-z](https://doi.org/10.1038/s41598-018-30375-z)

Terahertz spectroscopy of amorphous WSe_2 and MoSe_2 thin films

Materials 2018 | journal-article / DOI: [10.3390/ma11091613](https://doi.org/10.3390/ma11091613)

The absorptance of selective solar absorber working in high vacuum

IET Conference Publications 2018 | conference-paper / EID: 2-s2.0-85065710122

Fundamental study and analytical applications of nanoparticle-enhanced laser-induced breakdown spectroscopy (NELIBS) of metals, semiconductors and insulators

NATO Science for Peace and Security Series B: Physics and Biophysics 2017 | **book chapter** / DOI: [10.1007/978-94-024-0850-8_52](https://doi.org/10.1007/978-94-024-0850-8_52)

Nanoparticle Enhanced Laser Induced Breakdown Spectroscopy for Improving the Detection of Molecular Bands

Spectrochimica Acta - Part B Atomic Spectroscopy 2016 | journal-article / DOI: [10.1016/j.sab.2016.09.006](https://doi.org/10.1016/j.sab.2016.09.006)

Nanoparticle Enhanced Laser-Induced Breakdown Spectroscopy for Microdrop Analysis at subppm Level

Analytical Chemistry 2016 | journal-article / DOI: [10.1021/acs.analchem.6b00324](https://doi.org/10.1021/acs.analchem.6b00324)

Perspective on the use of nanoparticles to improve LIBS analytical performance: Nanoparticle enhanced laser induced breakdown spectroscopy (NELIBS)

Journal of Analytical Atomic Spectrometry 2016 | journal-article / DOI: [10.1039/c6ja00189k](https://doi.org/10.1039/c6ja00189k)

Reply to Comment on "nanoparticle Enhanced Laser-Induced Breakdown Spectroscopy for Microdrop Analysis at subppm Level"

Analytical Chemistry 2016 | journal-article / DOI: [10.1021/acs.analchem.6b03296](https://doi.org/10.1021/acs.analchem.6b03296)

Terahertz Time-Domain Study of Silver Nanoparticles Synthesized by Laser Ablation in Organic Liquid

IEEE Transactions on Terahertz Science and Technology 2016 | journal-article / DOI: [10.1109/TTHZ.2016.2572360](https://doi.org/10.1109/TTHZ.2016.2572360)

Nanoparticle Enhanced Laser Induced Breakdown Spectroscopy: Effect of nanoparticles deposited on sample surface on laser ablation and plasma emission

Spectrochimica Acta - Part B Atomic Spectroscopy 2014 | journal-article / DOI: [10.1016/j.sab.2014.05.010](https://doi.org/10.1016/j.sab.2014.05.010)

A new method for alcohol content determination of fuel oils by terahertz spectroscopy

International Conference on Infrared, Millimeter, and Terahertz Waves, IRMMW-THz 2013 | conference-paper / DOI: [10.1109/IRMMW-THz.2013.6665885](https://doi.org/10.1109/IRMMW-THz.2013.6665885)

Nanoparticle-enhanced laser-induced breakdown spectroscopy of metallic samples

Analytical Chemistry 2013 | journal-article / DOI: [10.1021/ac4016165](https://doi.org/10.1021/ac4016165)

CONFERENZE E PRESENTAZIONI (selezionate)

44th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), “3-D printed THz q-plate with a fixed rate of change of the optical axis”, Delft, Netherland, 2022(Oral Presentation)

Quantum Materials for Quantum Technologies/ “THz EMI dynamics in Graphene filler based composites, foams and multilayered structures” , QMQT, Rome, Italy, 2022(Oral Presentation)

4th International Science & Applications of Thin Films, Conference & Exhibition (SATF2020), “THz Electro Magnetic Interference (THz-EMI) Shielding Dynamics of Ultra-Thin Graphene/Polymer Laminates” September 21-25, 2020, Turkey (Invited Talk)

12th International Congress on Artificial Materials for Novel Wave Phenomena Diffuse 2018 “THz Scattering via Coding Metasurfaces” (Oral Presentation)

9th Mediterranean Conference on Nano-Photonics 2017, “Terahertz time-domain study of copper nanoparticles: investigation into the negative time shift observed for Cu nanoparticles”, 04/09/2017, Amalfi, Italy (Oral Presentation)

Workshop on Advances in Laser Induced Breakdown Spectroscopy. “Nanoparticle Enhanced Laser Induced Breakdown for Improving the Detection of Molecular Bands”, UNIBA, 22/06/2016, Bari, Italy (Invited Talk)